

ELK AND DEER ACCIDENTS ON PUBLIC ROADS IN 1987

ROADS AND WATERWAYS ADMINISTRATION
RESEARCH CENTRE

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ELK AND DEER ACCIDENTS ON PUBLIC ROADS IN 1987

**Roads and Waterways Administration
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PREFACE

The Roads and Waterways Administration follows the development of elk and deer accidents at the level of individual roads throughout the country. The data presented in this report on elk and deer accidents in 1987 are based on accident reports made by the police to the Roads and Waterways Administration. The accident statistics of the Roads and Waterways Administration cover approximately 70 % of all elk and deer accidents, but nevertheless provide 100 % coverage in respect of fatal accidents. The data on stocks of elk and deer and on the results of hunting are based on information provided by the Game and Fisheries Research Institute and the Central Organization of Finnish Hunters.

This summary has been compiled by the Traffic Division of the RWA. The material has been collected and analyzed by Mr Sami Sarkkinen under the supervision of Mr Mikko Ojajärvi, Head of the Safety Department.

Assistant Director



K. Härkänen

1. ELK AND DEER ACCIDENTS IN 1987 AND THE DEVELOPMENT OF ACCIDENTS

Elk and deer accidents are defined for the purposes of this report to be those involving elk (*Alces alces*) or white-tailed deer (*Odocoileus virginianus*). Accidents involving reindeer are not dealt with in the report.

The number of elk and deer accidents has remained at an annual level of around 2100-2400 accidents after a peak of 2951 accidents in 1980. According to the accident statistics of the RWA which are based on police reports, in 1987 there were 2507 elk and deer accidents on public roads, which is 7 % more than in the previous year (2333 accidents in 1986). Of these 1762 (1605)* accidents involved elk and 745 (728) involved white-tailed deer.

Table 1. Elk and deer accidents and their consequences in 1978-1987

Year		1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
No. of accidents	Elk accid.	1930	2067	2216	1729	1550	1755	1797	1642	1605	1762
	Deer accid.	736	704	735	587	528	639	654	742	728	745
	Total	2666	2771	2951	2316	2078	2394	2451	2384	2333	2507
No. of accidents	Elk accid.	3	9	7	3	5	6	5	4	4	3
	Deer accid.	-	1	-	-	-	-	-	1	1	1
	Total	3	10	7	3	5	6	5	5	5	4
No. of injured	Elk accid.	474	413	348	243	266	241	213	257	236	217
	Deer accid.	25	11	13	28	6	19	13	18	9	7
	Total	499	424	361	271	272	260	226	275	245	224

Despite this rise in the number of elk and deer accidents, the number of persons killed or injured in such accidents was lower than in the previous year. In 1987 there were 169 (176) fatal and personal injury accidents involving elk or deer on public roads. Of these 162 (167) involved elk and 7 (9) involved deer. In the elk accidents 3 (4) people were killed and 217 (236) were injured. In the deer accidents 1 (1) person was killed and 7 (9) were injured.

* Figures for the previous year (1986) are given in parentheses.

The number of fatal and personal injury accidents was lower in the Häme, Northern Karelia, and Vaasa districts, among others. In the Kymi and Central Finland districts, however, there was a marked increase in the number of such accidents.

Table 2. Elk and deer accidents by road and waterway district in 1986-87

District	Elk accidents							Deer accidents							Elk and deer accidents total		
	Fatal accidents		Personal-injury accidents		Total			Fatal accidents		Personal-injury accidents		Total					
	86	87	86	87	86	87	Change %	86	87	86	87	86	87	Change %	86	87	Change %
U	1	-	33	32	197	207	+ 5	-	-	4	1	90	118	+31	287	325	+13
T	-	1	26	27	232	248	+ 7	1	1	2	4	317	305	- 4	549	553	+ 1
H	1	-	29	10	235	208	-11	-	-	1	1	297	296	- 0	532	504	- 5
Ky	-	-	10	21	119	120	+ 1	-	-	-	-	3	2		122	122	0
M	1	-	14	15	126	157	+25	-	-	-	-	9	8		135	165	+22
NK	-	-	8	4	68	78	+15	-	-	-	-	-	-		68	78	+15
Ku	1	-	6	6	83	82	- 1	-	-	-	-	1	-		84	82	- 2
CF	-	-	6	12	106	130	+23	-	-	-	-	3	2		109	132	+21
V	-	1	14	8	135	147	+ 9	-	-	-	-	7	11		142	158	+11
KP	-	-	1	2	56	82	+46	-	-	1	-	1	-		57	82	+44
O	-	-	8	11	112	160	+43	-	-	-	-	-	-		112	160	+43
Kn	-	-	3	6	59	71	+20	-	-	-	-	-	1		59	72	+22
L	-	-	5	6	77	72	- 6	-	-	-	-	-	2		77	74	- 4
Entire country	4	2	163	160	1605	1762	+10	1	1	8	6	728	745	+ 2	2333	2507	+ 7

Accidents involving deer were concentrated in the Uusimaa, Turku and Häme districts; over 95 % of all deer accidents occurred in these districts. The total number of deer accidents in 1987 showed no significant change (2 % higher) compared with 1986, but in Uusimaa District there was a considerable rise (31 %) in the number of accidents.

The number of fatal and personal-injury accidents also remained at the same level, with 1 (1) fatal accident and 6 (8) personal-injury accidents. Since 1975 there have been altogether five fatal accidents involving deer (in 1977, 1979, 1985, 1986 and 1987). In each of these accidents one person died.

The number of elks shot in 1987, approximately 45,500, was 6 % less than in 1986. On the other hand the number of deer shot in 1987, approximately 7,800, was 2 % higher than in 1986.

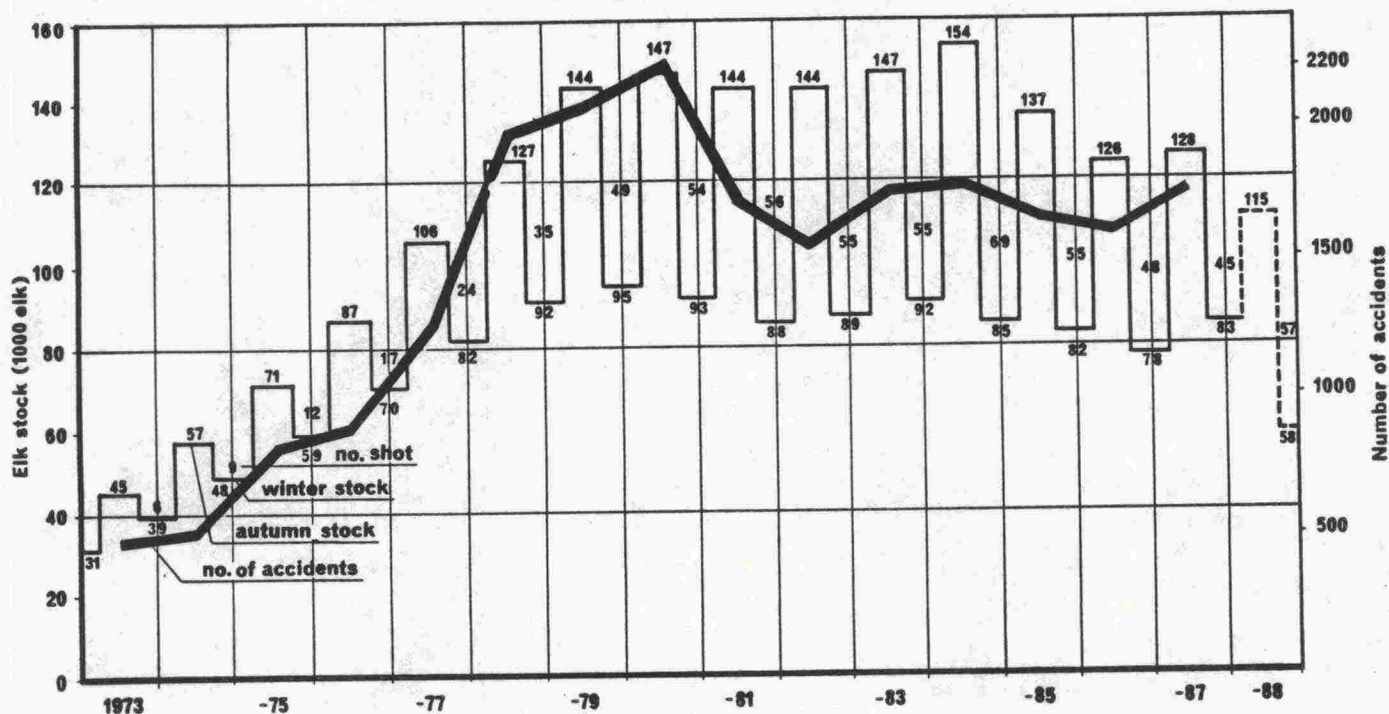


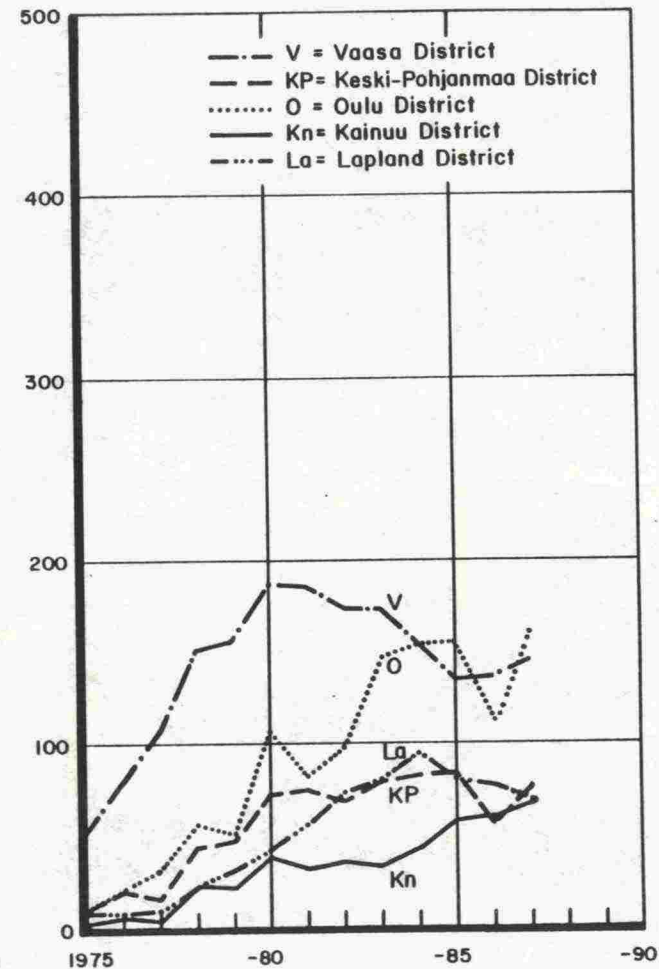
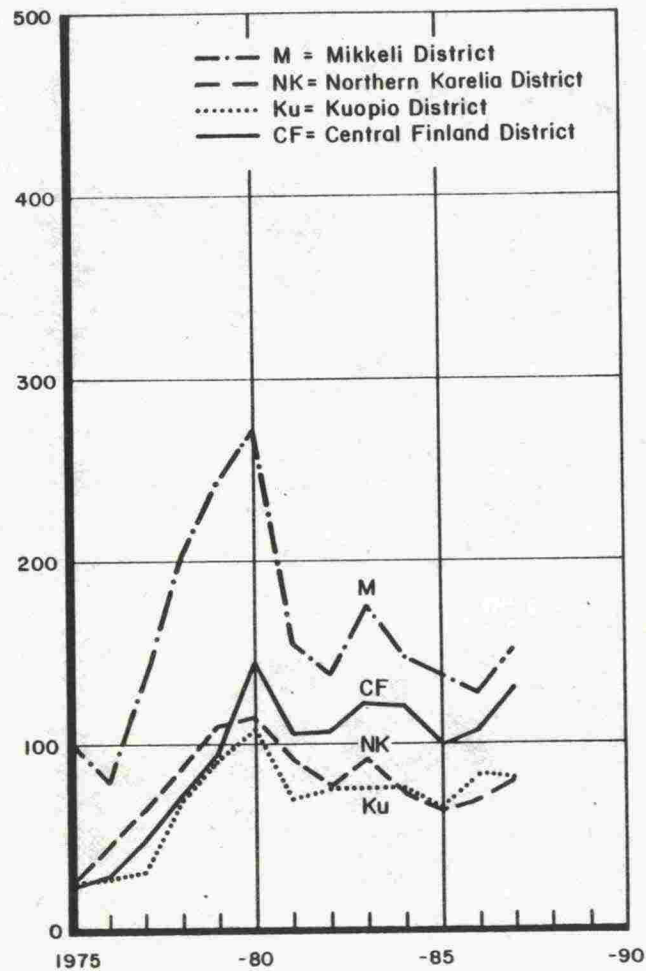
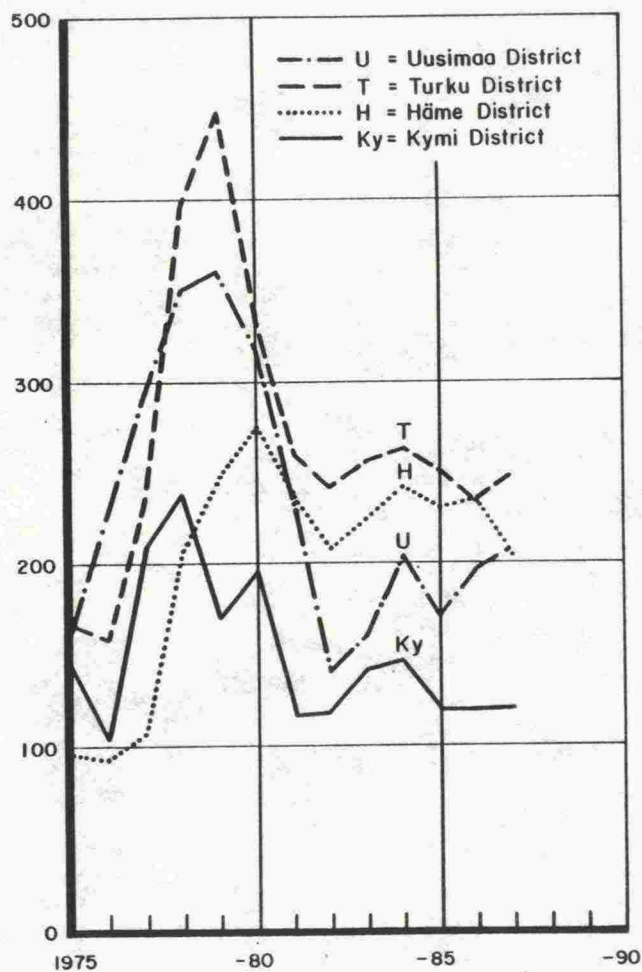
Figure 1. The stock of elk and the number of elk accidents on public roads, 1973-1987

2. THE DEVELOPMENT OF ELK AND DEER ACCIDENTS BY ROAD AND WATERWAY DISTRICT

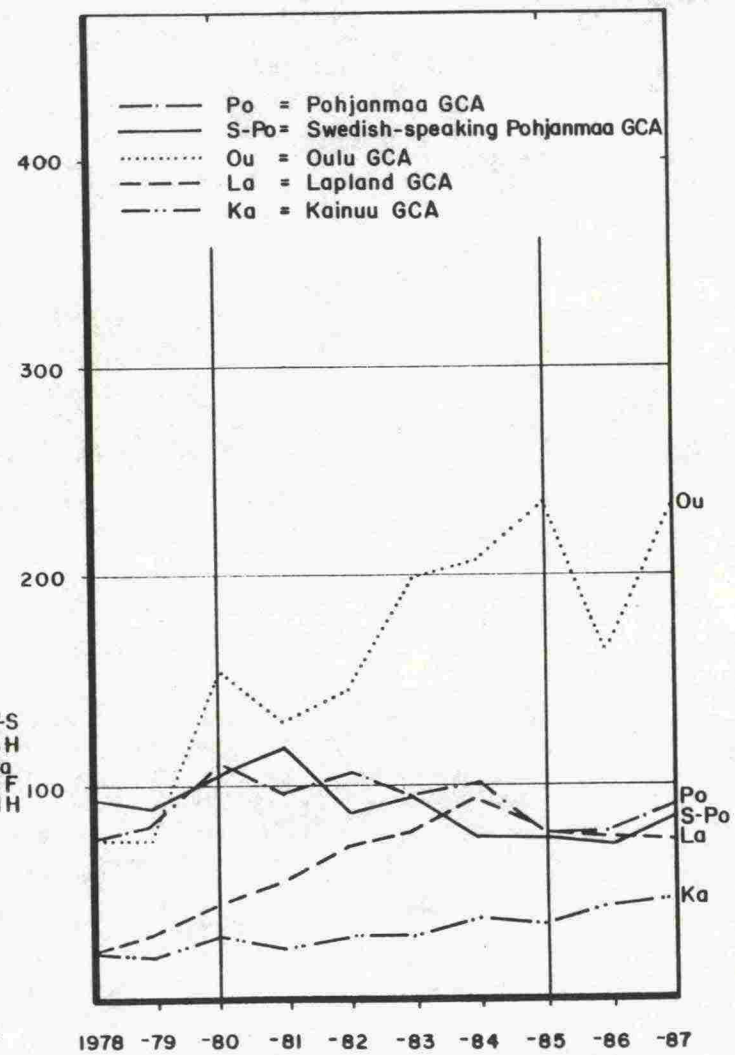
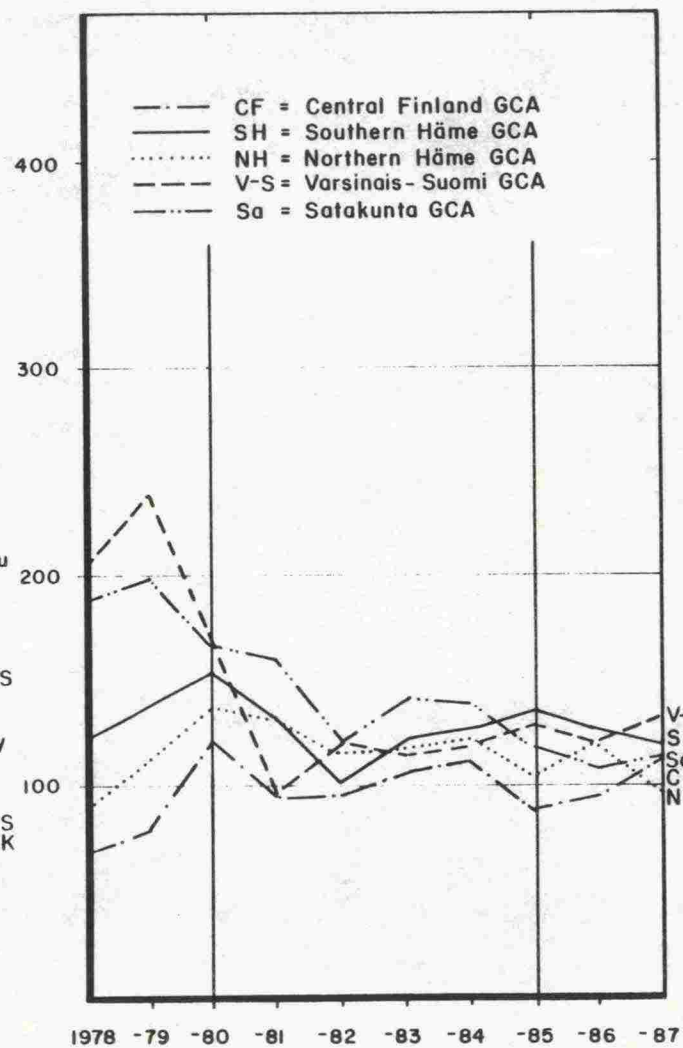
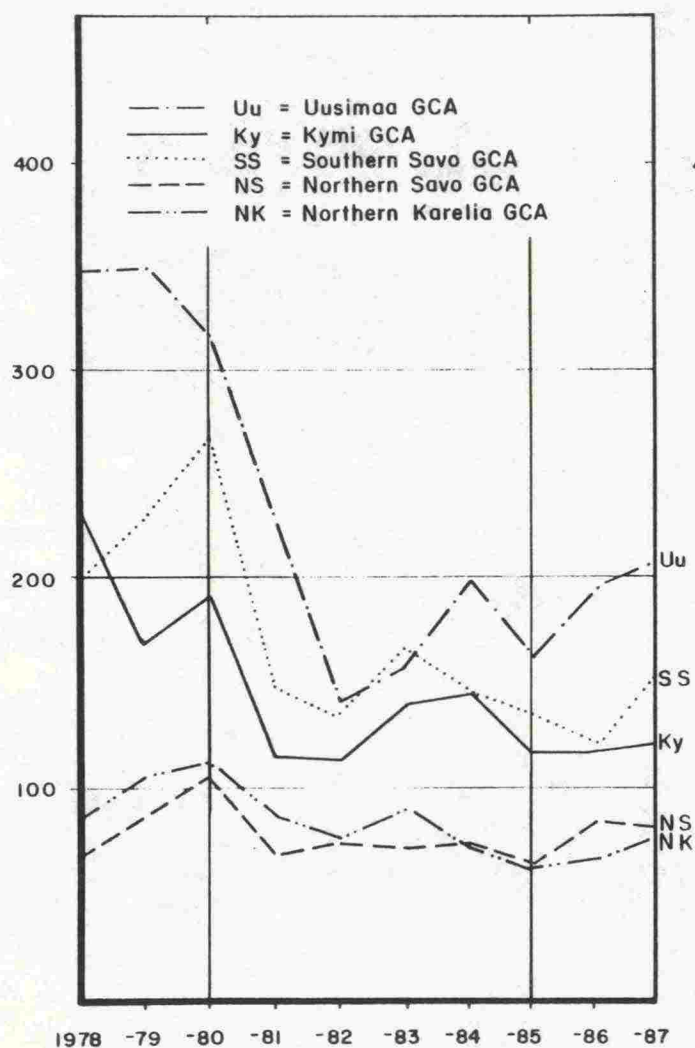
For Finland as a whole the number of elk and deer accidents on public roads in 1987 increased by 7 % compared with 1986. The number of accidents increased significantly in the Keski-Pohjanmaa (44 %), Oulu (43 %), Mikkeli (22 %), Kainuu (22 %) and Central Finland (21 %) districts. The largest decrease in the number of accidents was in Häme District (5 %).

Although the number of elk accidents increased by 10 % and the number involving fatalities or personal injuries decreased by only 3 %, there was an 8 % reduction in the number of fatalities and personal injuries compared with 1986.

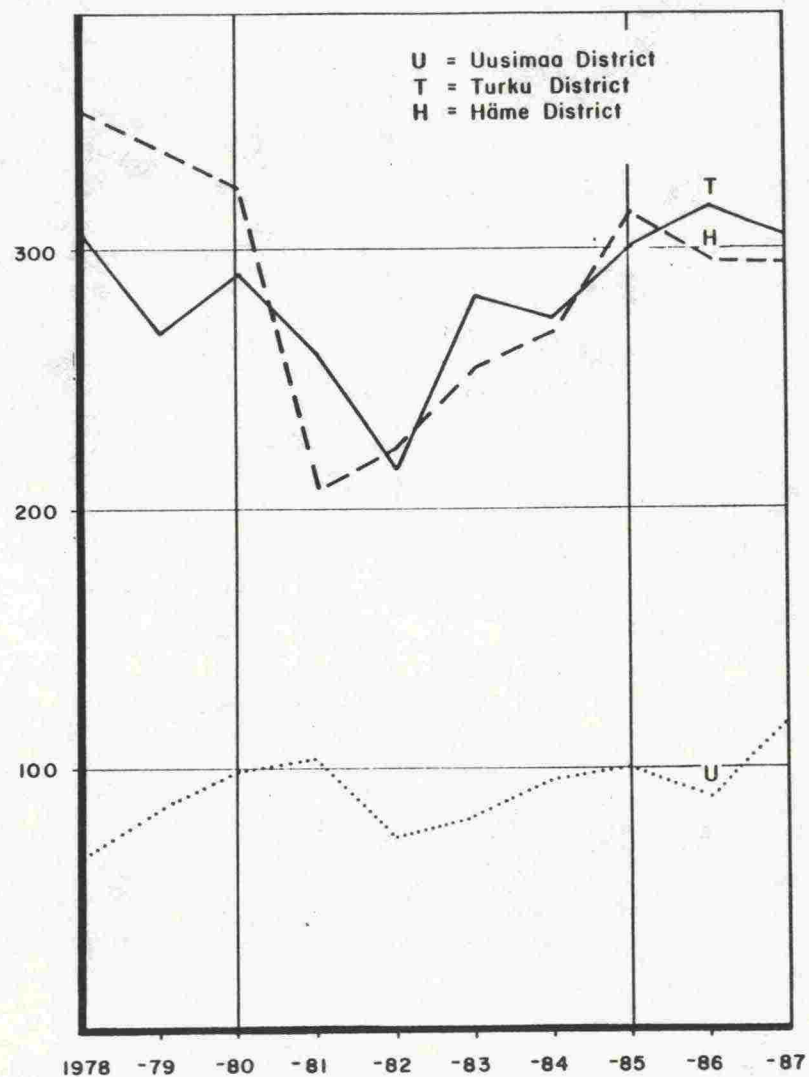
APPENDICES



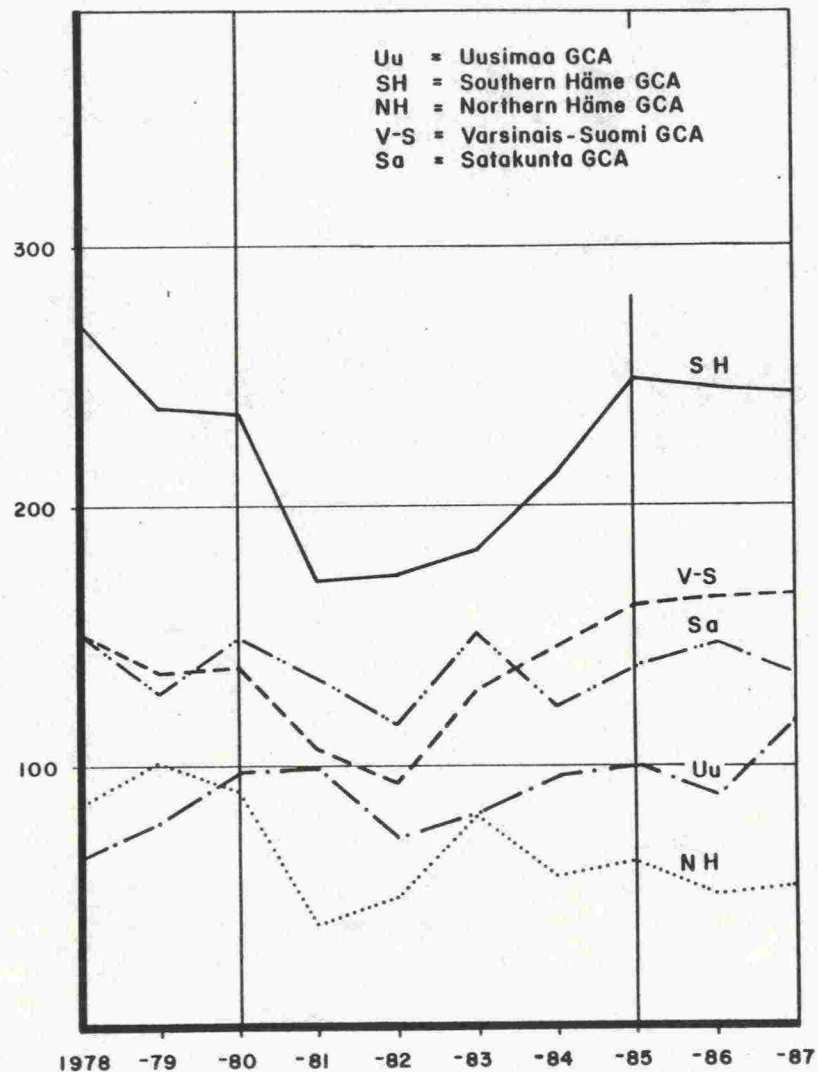
ELK ACCIDENTS BY ROAD AND WATERWAY DISTRICT IN 1975-87 ACCORDING TO RWA'S STATISTICS



ELK ACCIDENTS BY GAME CONSERVATION AREA (GCA), 1978-87

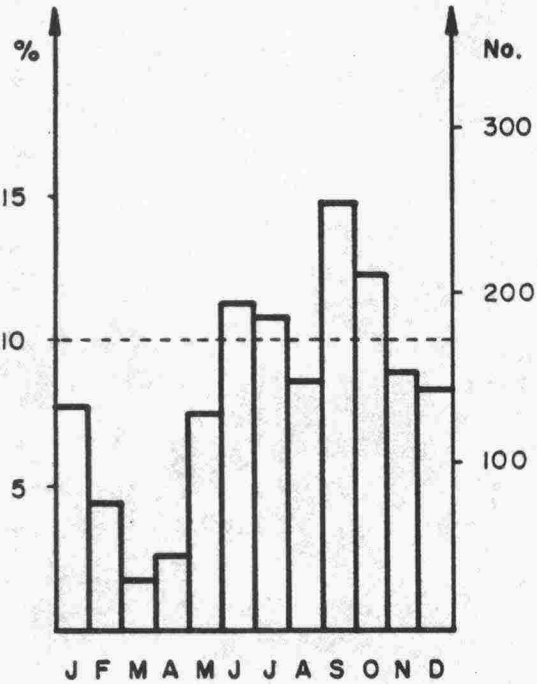


DEER ACCIDENTS BY ROAD AND WATERWAY DISTRICT, 1978 - 87

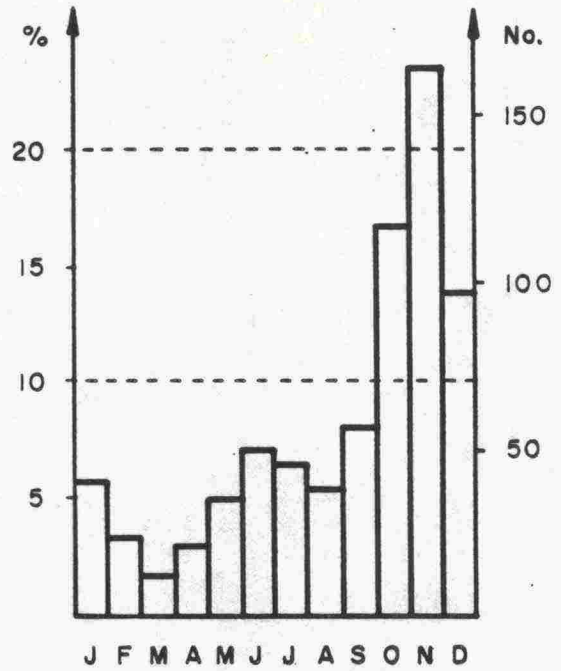


DEER ACCIDENTS BY GAME CONSERVATION AREA (GCA), 1978 - 87

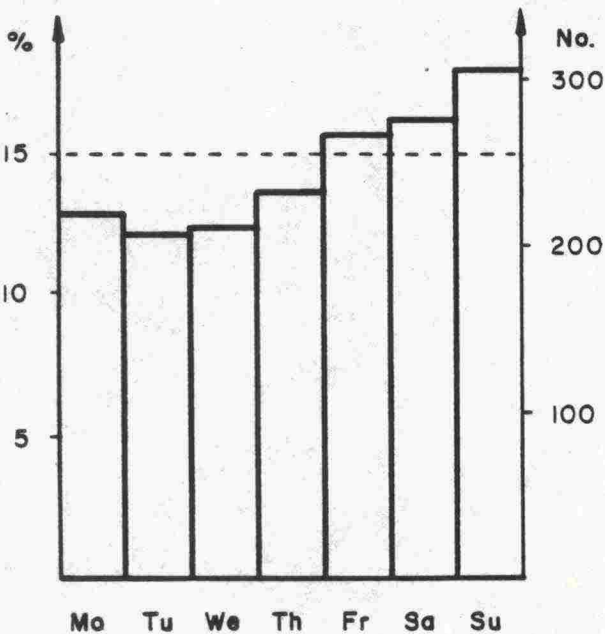
**ELK ACCIDENTS
BY MONTH
AVERAGE 1983-87**



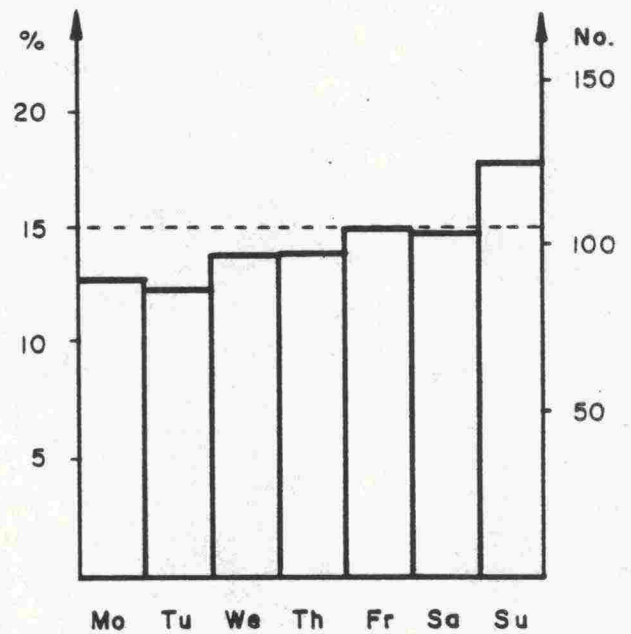
**DEER ACCIDENTS
BY MONTH
AVERAGE 1983-87**



**ELK ACCIDENTS
BY DAY OF WEEK
AVERAGE 1983-87**

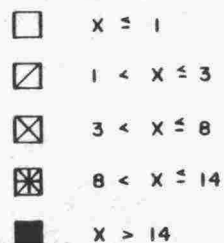
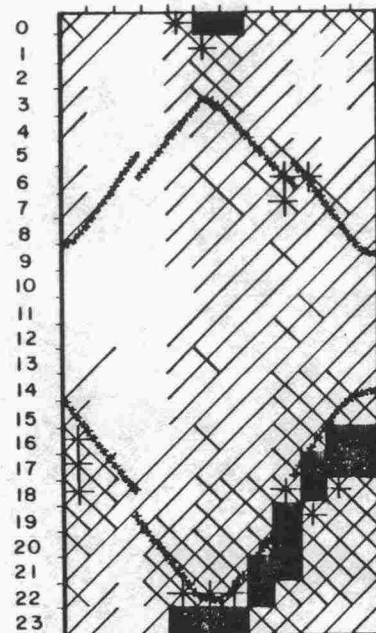


**DEER ACCIDENTS
BY DAY OF WEEK
AVERAGE 1983-87**



U,T,H,Ky and M DISTRICTS

J F M A M J J A S O N D



AV. 1029 ACCID. / ANNUM

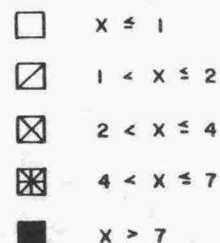
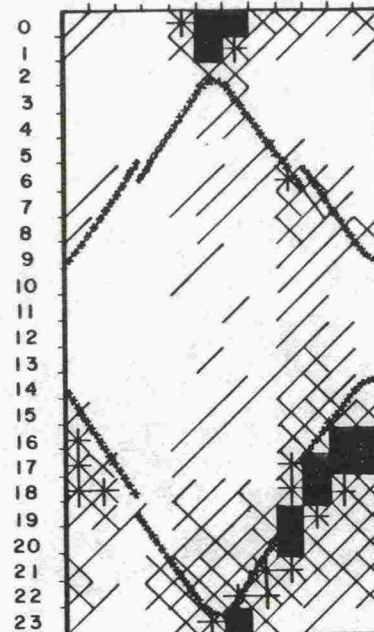
LATITUDE 61°N

0 = 00.00 - 00.59
 1 = 01.00 - 01.59
 2 = 02.00 - 02.59
 ...
 23 = 23.00 - 23.59

*** = TIME OF SUNRISE AND SUNSET (SOURCE: THE NAUTICAL ALMANAC 1982)

NK, Ku, CF, V and DISTRICTS

J F M A M J J A S O N D



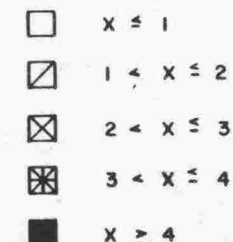
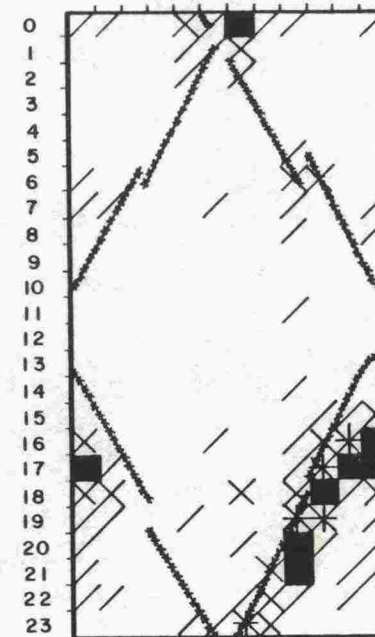
AV. 537 ACCID. / ANNUM

LATITUDE 63°N

X = NO. OF ACCIDENTS

O, Kn and L DISTRICTS

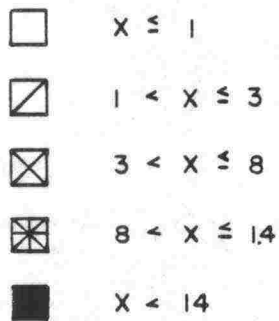
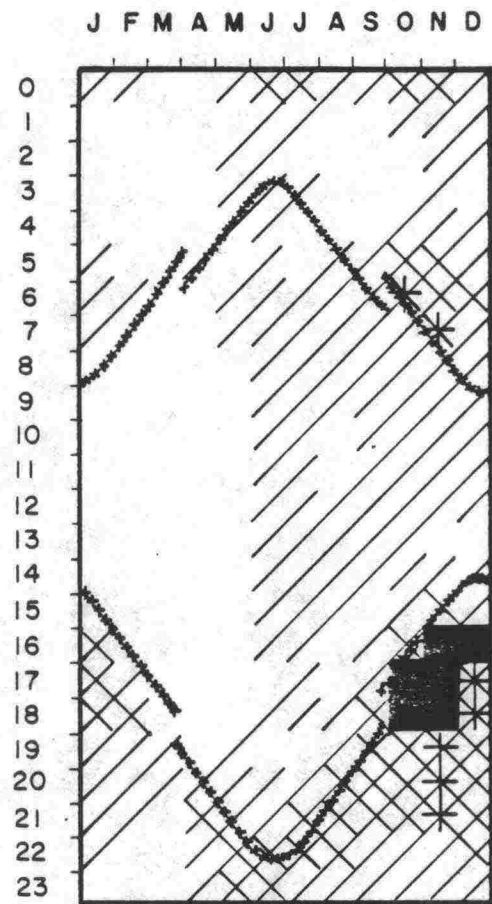
J F M A M J J A S O N D



AV. 254 ACCID. / ANNUM

LATITUDE 66°N

ELK ACCIDENTS BY MONTH AT DIFFERENT TIMES OF DAY, 1980-87 (AVERAGE)



AVERAGE 662 ACCIDENTS PER ANNUM

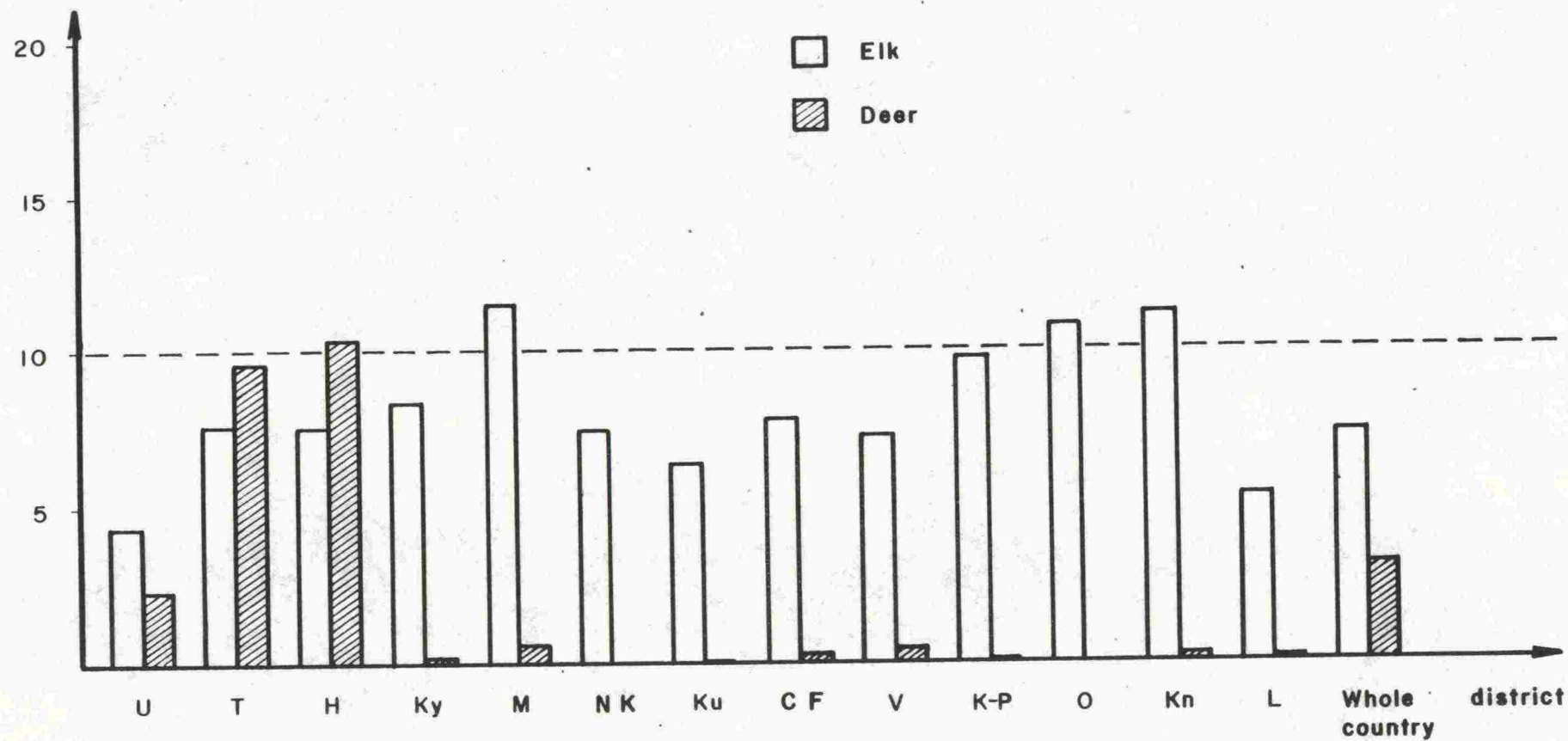
X = NO. OF ACCIDENTS

0	=	00.00 - 00.59
1	=	01.00 - 01.59
2	=	02.00 - 02.59
...		
23	=	23.00 - 23.59

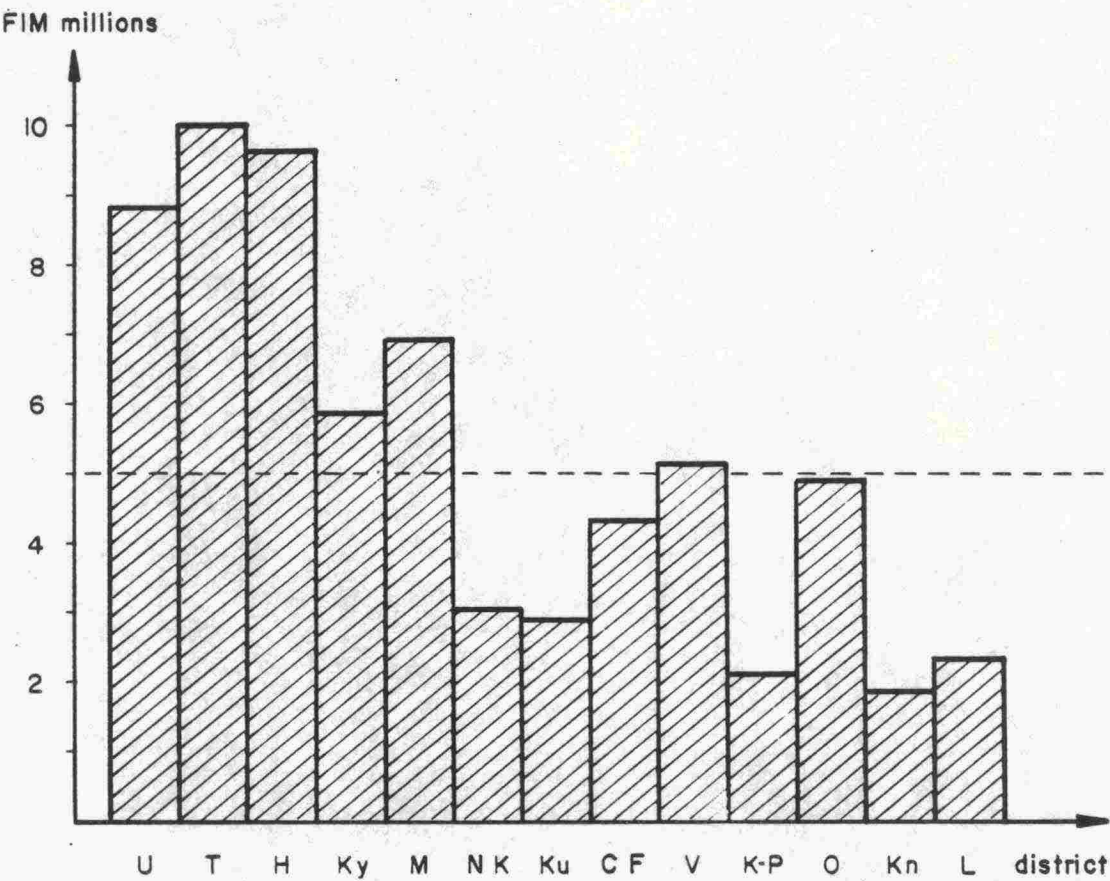
**** = TIME OF SUNRISE AND SUNSET, LATITUDE 61° N
(SOURCE: THE NAUTICAL ALMANAC 1982)

DEER ACCIDENTS IN U, T AND H DISTRICTS 1980-87
(AVERAGE)

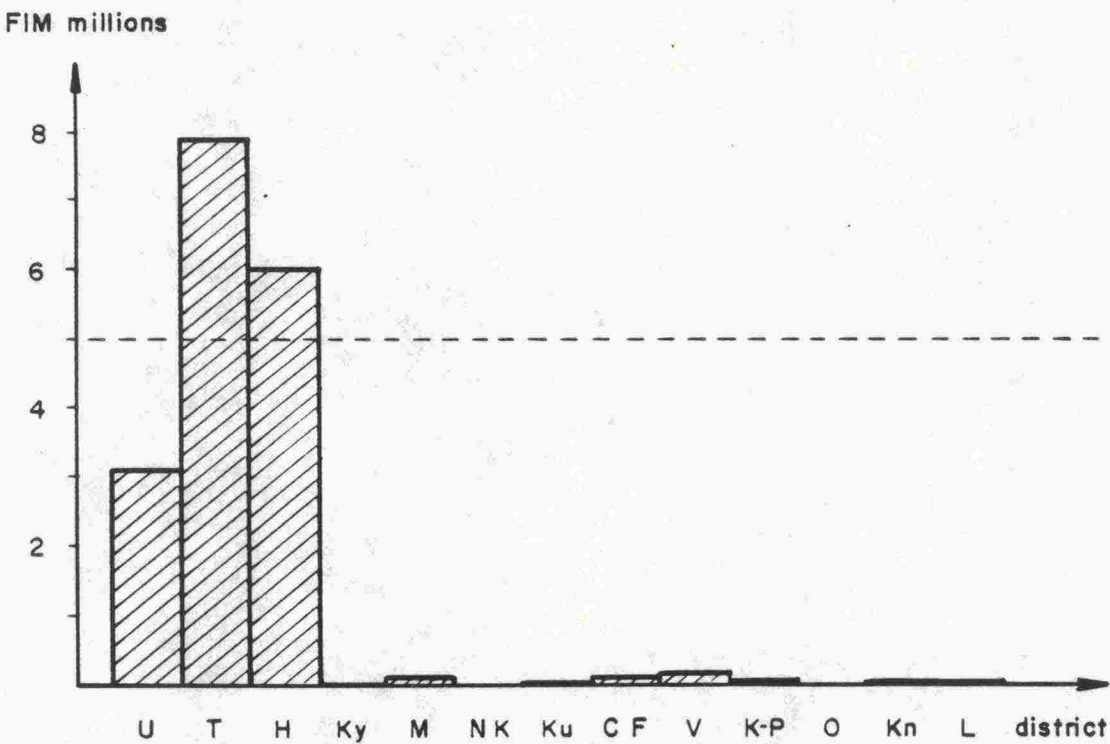
Accidents / 10^8 vehicle km



ACCIDENT RATES BY DISTRICT FOR ELK AND DEER ACCIDENTS (AVERAGE 1985-87)



ANNUAL COSTS OF ELK ACCIDENTS BY DISTRICT, 1983-87
(AVERAGE)



ANNUAL COSTS OF DEER ACCIDENTS BY DISTRICT, 1983-87
(AVERAGE)

RESULT OF ELK HUNTING, 1975-1987

GAME PRESERVATION AREA	Y E A R												
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
Southern Häme	601	844	1711	2489	3358	3045	3123	1398	1941	2587	2221	1901	1119
Southern Savo	976	1226	1711	2657	4843	7423	6466	4839	4367	5711	2354	2918	2981
Central Finland	578	794	1055	1657	2386	3722	4337	4266	3928	4517	4134	3311	2890
Kymi	1545	2724	4307	5596	6625	3770	2944	3229	2980	5122	2676	2276	1775
Lapland	874	905	1035	1201	1365	1497	1719	2136	2550	4354	6191	6801	6546
Oulu	801	965	1184	1560	2169	3092	4290	7231	8240	11349	9073	9188	9270
Pohjanmaa	580	692	899	1181	1977	3641	6635	8135	6489	7609	4998	4428	3841
Northern Häme	531	626	1162	1467	2350	2784	2791	2737	2266	3337	2462	2256	2524
Northern Karelia	626	690	936	1310	2672	2567	3099	3762	3501	4115	2721	1997	2037
Northern Savo	402	729	980	1284	2432	3720	3952	3348	3050	2791	3138	2593	2514
Swedish-speaking Pohjanmaa	767	913	1716	2176	2734	3225	3943	4626	5201	4794	3241	2530	2488
Satakunta	849	1309	1760	3312	5064	5052	4957	4250	4090	5067	4148	2419	1195
Uusimaa	1699	2131	2809	4771	5305	5616	4358	2640	2981	3235	2727	1523	1803
Varsinais-Suomi	1458	2400	2863	3965	5707	4608	3564	2325	2210	2763	3004	2189	1973
Kainuu									1189	1492	1733	2078	2476
Total	12287	16948	24128	34626	48987	53762	56178	54922	54983	68843	54821	48408	45432

Source: Central Organization of Finnish Hunters

RESULTS OF ELK HUNTING IN 1987

	No. of shooting permits issued			No. of full-grown elks shot				No. of fawns shot				Total no. shot		
	full-grown	fawns	total	bucks	does	total	% shot	bucks	does	total	% shot	total	% shot	% fawns
Southern Häme	685	473	1 158	276	380	656	95.8	242	221	463	97.9	1 119	96.6	41.4
Southern Savo	2 021	1 087	3 108	979	932	1 911	94.6	559	511	1 070	98.4	2 981	95.9	35.9
Kainuu	1 457	1 077	2 534	861	582	1 443	99.0	508	525	1 033	95.9	2 476	97.7	41.7
Central Finland	1 513	1 511	3 024	776	713	1 489	98.4	739	662	1 401	92.7	2 890	95.6	48.5
Kymi	1 282	544	1 826	704	536	1 240	96.7	280	255	535	98.3	1 775	97.2	30.1
Lapland	4 893	2 893	7 777	2 234	1 982	4 216	96.2	1 229	1 101	2 330	80.5	6 546	90.0	35.6
Oulu	5 832	3 678	9 510	2 871	2 865	5 736	98.4	1 846	1 688	3 534	96.1	9 270	97.5	38.1
Pohjanmaa	2 336	1 593	3 939	1 160	1 117	2 277	97.5	848	716	1 564	98.2	3 841	97.8	40.7
Northern Häme	1 317	1 358	2 675	618	660	1 278	97.0	673	573	1 246	91.8	2 524	94.4	49.4
Northern Karelia	1 403	735	2 138	716	648	1 364	97.2	338	335	673	91.6	2 037	95.3	33.0
Northern Savo	1 573	1 057	2 630	736	787	1 523	96.8	522	469	991	93.8	2 514	95.6	39.4
Swedish-speaking														
Pohjanmaa	1 541	1 090	2 631	833	613	1 446	93.8	529	513	1 042	95.6	2 488	94.6	41.9
Satakunta	704	516	1 220	400	298	698	99.1	265	232	497	96.3	1 195	98.0	41.6
Uusimaa	1 199	742	1 941	648	489	1 137	94.8	371	295	666	89.8	1 803	92.9	36.9
Varsinais-Suomi	1 031	977	2 008	531	480	1 011	98.1	507	455	962	98.5	1 973	98.3	48.8
	28 278	19 331	47 609	14 343	13 082	27 425	97.0	9 456	8 551	18 007	93.2	45 432	95.4	39.6

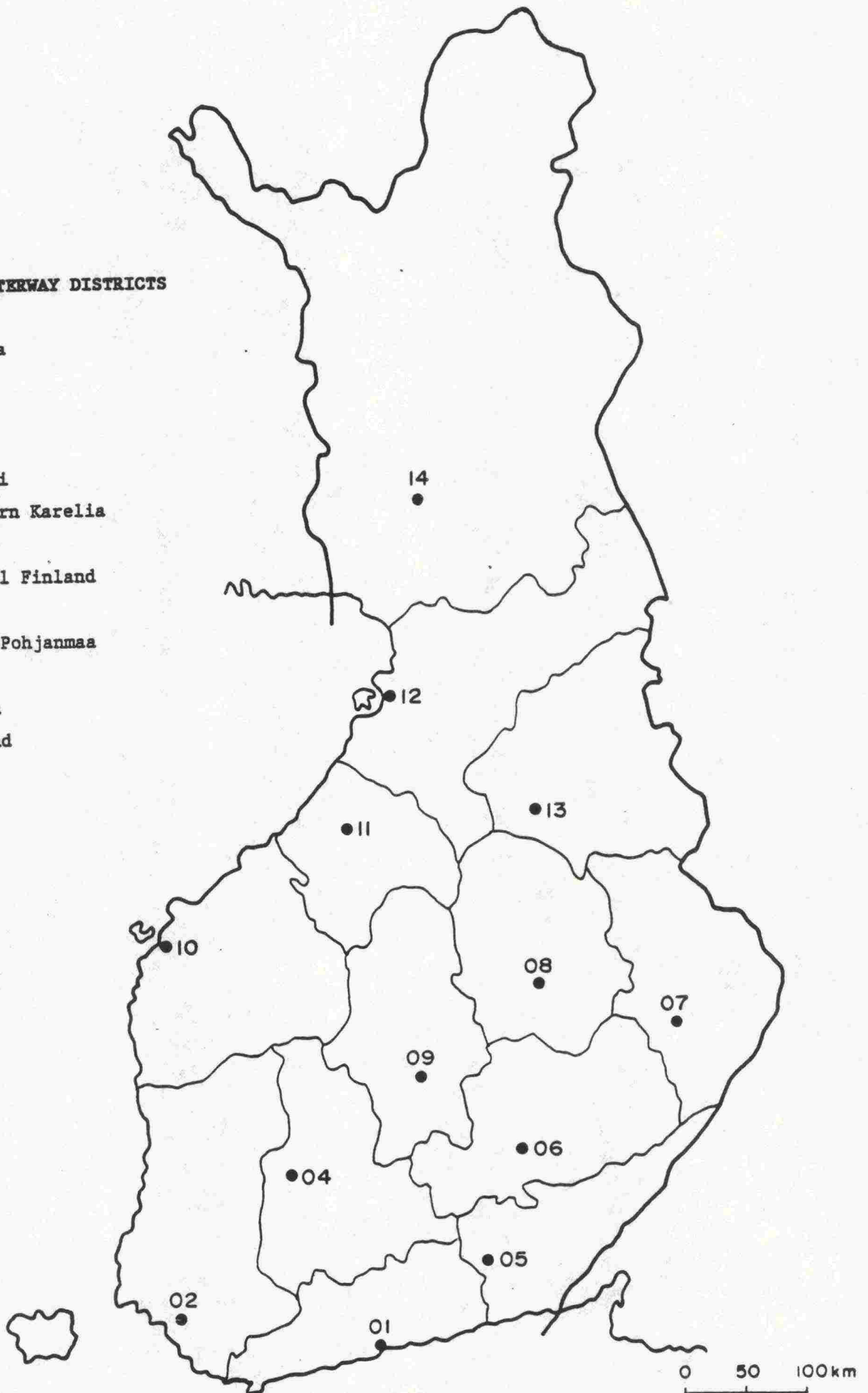
RESULTS OF WHITE-TAILED DEER HUNTING IN 1987 (15 OCT. 87 - 15 JAN. 88)

	Shooting permits	No. shot				% shot	% fawns	1986	
		bucks	does	fawns	total			shot	% shot
Southern Häme	1 860	524	499	1 179	2 202	76.1	53.5	2 114	76.8
Southern Savo	72	16	15	18	49	51.4	36.7	42	46.0
Central Finland	68	14	8	16	38	40.1	42.1	25	35.4
Kymi	52	13	10	4	27	46.7	14.8	25	39.6
Pohjanmaa	23	4	6	6	16	52.2	37.5	12	24.4
Northern Häme	768	243	157	277	677	64.1	40.9	722	67.4
Sw. Pohjanmaa	104	27	17	5	49	43.9	10.2	62	46.2
Satakunta	1 832	546	501	891	1 938	73.4	46.0	1 914	74.5
Uusimaa	1 238	299	221	264	784	49.1	33.7	776	46.6
Varsinais-Suomi	1 862	593	422	999	2 014	72.4	49.6	1 941	74.1
	7 879	2 279	1 856	3 659	7 794	68.0	46.9	7 633	68.3

The number of deer shot may exceed the number of shooting permits issued because a single permit allows three fawns to be shot.

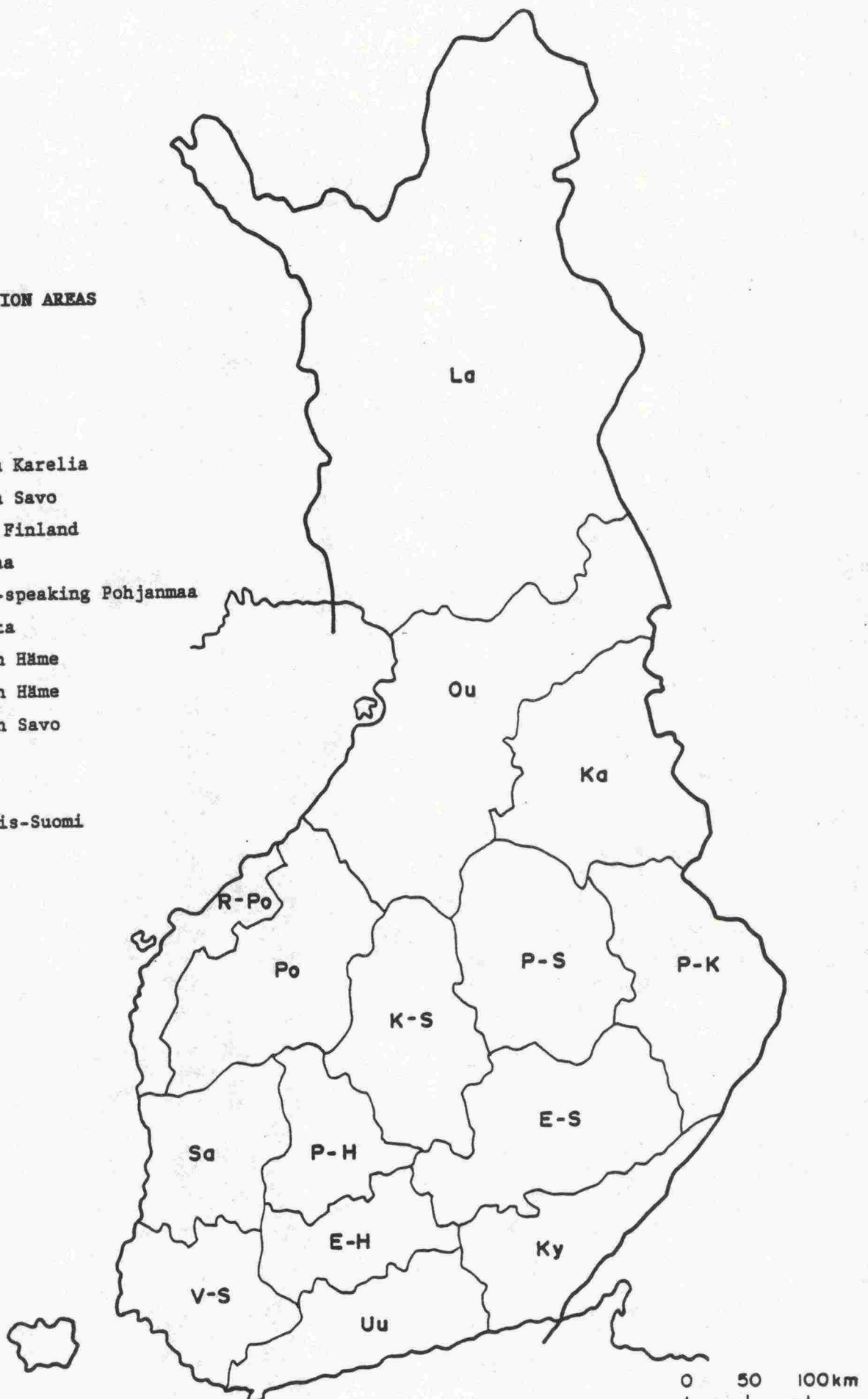
ROAD AND WATERWAY DISTRICTS

- 01 - Uusimaa
- 02 - Turku
- 04 - Häme
- 05 - Kymi
- 06 - Mikkeli
- 07 - Northern Karelia
- 08 - Kuopio
- 09 - Central Finland
- 10 - Vaasa
- 11 - Keski-Pohjanmaa
- 12 - Oulu
- 13 - Kainuu
- 14 - Lapland



GAME PRESERVATION AREAS

- La = Lapland
 Ou = Oulu
 Ka = Kainuu
 NK = Northern Karelia
 NS = Northern Savo
 CF = Central Finland
 Po = Pohjanmaa
 S-Po = Swedish-speaking Pohjanmaa
 Sa = Satakunta
 NH = Northern Häme
 SH = Southern Häme
 SS = Southern Savo
 Ky = Kymi
 Uu = Uusimaa
 V-S = Varsinais-Suomi



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